

**Using SecondLife Online Virtual World Technology to Introduce  
Educators to the Digital Culture**

**by**

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# Using the SecondLife Online Virtual World Technology to Introduce Educators to the Digital Culture

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**Abstract.** The rapidly changing culture resulting from new technologies and digital gaming has created an increasing language gap between traditional educators and today's learners (Natkin, 2006; Seely-Brown, 2000). This study seeks to use the online virtual world of SecondLife.com as a tool to introduce educators to this new environment for learning. This study observes the activities and perceptions of a group of educators given unscripted access to this virtual environment. The results suggest that although serious technology limitations do currently exist, the potential of this virtual world environment as a learning experience for educators is strong.

## Introduction

Today's learners are different. Although a mantra of every new generation, we are currently engaged in a period of cultural transition similar to that following Gutenberg's introduction of the printing press; a transition which changes the basic roles and relationships of society, impacts all corners of the globe, and cannot be ignored or avoided (Friedman, 2005; Kurzweil, 2005). One facet of the transition grows from our new awareness of the learning experience itself, and is based in the principles of neuroplasticity and connectivity (Bransford, 1999; Restak, 2003). The additional facet is the profound integration of previously independent technologies, leading to a culture of digital immersion (Beck & Wade, 2004; Friedman, 2005; Kurzweil, 2005; Kurzweil, 2002). A growing number of the learners in our traditional classrooms have never known life without cell phones, text-messaging, high speed internet connections, and digital games as learning tools (Seely-Brown, 2000).

Because of their ongoing learning experiences, we now know that behaviors we often abhor in our classrooms are less a result of choice, and more a result of their physical, internal wiring; their developmental experiences truly make us different (Bransford, 1999; Restak, 2003; Seely-Brown, 2000). Their insistence upon understanding the personal value in what they are asked to do, their open and vocal expectation for choices in their learning activities, and their demand to be entertained, most often seen as

acts of rebellion and disrespect, are more accurately a simple continuance of the expectations created in them as a result of their highly engaged and self-directed experiences of their digital culture (Beck & Wade, 2004; Natkin, 2006). This is the result of a lifelong cultural experience of immediate communication access to other people and information, and of the freedom to self-select activities based upon current self-interest and engagement; significantly created through the use of digital gaming in early learning experiences (Jukes & McCain, 2001).

Our educational system is facing increasingly serious challenges as it continues to expect these digital learners to enter our traditional environment, and leave their digital culture out in the hall (Seely-Brown, 2000). While learners come from a culture in which the active digital gamer spend as much as twenty-three hours a week playing fully immersive online digital games, engaged in highly involved and interactive experiences requiring profound levels of engagement, communication and self-direction (and pay for the privilege), those learners are then asked to enter the instructor's familiar environment: instructor-created, instructor-led, do-it-because-you-will-need-it-someday learning environment, and be engaged (Beck & Wade, 2005).

The challenge is compounded by the continuing belief of many educators that this digital game experience is somehow superfluous, not serious, and significantly less valuable than the experiences they were

wired to perceive as having value (Prensky, 2006). Those educators not only discredit the game culture, but do not even pay enough attention to understand the language, thereby further increasing the gap between the cultures. With the fact that all current evidence points to a continued massive expansion and integration of the gaming culture, and the assured eventual leadership role these digital learners will assume in our global society, it seems clear that educators wishing to remain relevant and employed must seek methods of, if not joining the digital culture, at least becoming familiar with the language it is imposing (Barr & Tagg, 1995; Moore, 2005; Plantec, 2004).

## Background

Digital gaming has become a 23 billion dollar industry, third in popularity only to DVD movie sales and television, which it is expected to surpass within the next eighteen to twenty-four months (Natkin, 2006). No longer a young person's behavior, the average age of the active digital gamer is 32 years of age, and one of the age groups most rapidly entering the digital gaming environment is that group over age sixty-five (Moore, 2006). As a result, it is becoming increasingly difficult to enter a learning environment without the presence of the digital gaming culture.

Although the current largest population of digital gamers is known as the casual games audience, referred to as the 'soccer moms' group because of their preference for short and easily accessible games, the second largest, and perhaps most immersed group is that involved in the Massive Multiplayer Online Role Playing Game (MMPORPG). The most popular MMPORPG, Everquest II, has hundreds of thousands of players, with the average player spending twenty three hours a week online, and paying an average of fifteen dollars a month for the privilege (Beck & Wade, 2005). Although many features create the popularity of these MMPORPG games, they are all based upon the technology of the three dimensional (3D) Multi User Virtual Environment (MUVE), which allows for a wide range of creative, collaborative and communicative activities and experiences. Within these virtual worlds, players create a character or characters, each represented by a 3D avatar which can be fully customized

and individualized as the player desires. While some games may be played solo, most require the player to become a part of a group or guild, which then functions together to address a wide range of quests and adventures. The success of the group fully depends upon the unique and specific contributions of the individual members, each of whom must learn a wide range of skills and behaviors unique to their character. Their ability level and improvement is readily apparent, and receives significant support and encouragement from other guild members. Failure is a frequent part of the learning process, and is seen as a step toward eventual mastery, and an opportunity for fellow members to tutor the learner to that eventual mastery.

Those educators who are familiar with the digital game culture, especially the features of the MMPORPG, have demonstrated significant abilities to use that familiarity to create meaningful new learning environments for all learners (Beck & Wade, 2005; Jones, 2003; Natkin, 2006; Prensky, 2005; Prensky, 2006). Rather than simply playing games, meaningful change has been brought about through the introduction of game theory into learning, and through adapting the environment to recognize and use the strengths of the game playing culture: determination, self-expression, self-direction, low fear of failure, multitasking, and the desire for collaboration (Miller, 2003). The use of virtual world technology may also present a meaningful next-step in the growing field of distance learning, with its ability to create visualization and higher levels of communication (Schank, 2002; Schlager, 2004; Simonson & Smaldino, 2003).

The question then exists as to how best introduce the traditional, yet willing educator to this world of 3D virtual world, digital gaming. Because of the degree of sophistication and intensity of the actual online game, this is often seen as too intimidating for the newcomer, creating pressures and expectations that interfere with a relaxed learning experience. A suitable alternative exists in the available online services that provide a 3D virtual world environment, but without the structured and high-pressured performance expectations. Current services include SecondLife, There,

Active Worlds, Moove and others (see Appendix A). Each of these services features an immersive 3D virtual world with varying levels of interaction, communication and creativity. For the purposes of this study, SecondLife was chosen because of its tested existence, popularity, its depth and breadth of opportunity for exploration and self-expression, its relatively low learning curve, and because it is free, making it more easily accessible. SecondLife was also selected because of the extensive list of other education-related projects underway in that environment, and the existence of a very active academic community. See Appendix B for a partial list of other such educational projects currently underway in SecondLife.

The environment of SecondLife is truly open-ended, with a virtual landscape that can be customized as desired. A typical view within a virtual world is seen in figure 1. Players may change the terrain; create buildings, vehicles and most any other objects, all using the simple tools included in the environment. As in the MMORPG environment, players create a personal character avatar, which they may customize as well. A typical example of a creative SecondLife avatar is seen in figure 2. SecondLife has no specific game rules, and there is no imposed agenda. Players are free to explore, create and interact as they choose, creating a unique opportunity for self discovery and construction of individualized learning. Figure 3 shows the landscape of the island of imagiLEARNING, which was created specifically for this research and served as the home for the study participants.

### **The Study**

The sample for this study consisted of five educators; two instructors from a two-year school in Colorado, two from two four-year schools in Florida, and one serving as a director of an educational agency serving the P-12 learning environment. The instructors represented the academic discipline areas of sports medicine, graphic design, math and education. Ten volunteer instructors responded to an email request for participants posted to a listserv of instructors interested in the connection between technology and learning. The selection of the five final participants was based upon their having a basic set of technology skills, ongoing access

to internet-based technology, and the willingness to make a time commitment of three to four hours a week. The required set of basic skills was used as a criterion to avoid having unrelated technology issues interfere with the specific technology activities of the virtual world technology. The final criterion was to select participants who were not previously familiar with the virtual world environment, making this a true, first introduction to that environment. During the period of the study, three of the instructor-participants were teaching full loads at their respective institutions, and the fourth was serving as an adjunct instructor teaching a partial load of two courses. For the purposes of clarity in this study, and to preserve confidentiality, participants will be referred to as participant one through participant five.

The design of the study called for each participant to download and install the free software from SecondLife.com, and to create their individual character, or avatar, which would represent them in the virtual environment. Participants would then use the software to enter the virtual world of SecondLife, visiting a virtual island called imagiLEARNING, created specifically for the study. Although participants were expected to participate in weekly, synchronous text discussion in-world to provide and update the basic skills needed to function in the environment, the study was primarily established to observe and monitor the participants' ongoing unscripted exploration of the virtual environment. While the researcher participated in discussions to respond to frequent procedural questions relating to the technology of the virtual world, the researcher made every effort to not discuss or otherwise influence the direction of exploration carried out by the participants.

Data collected included comments from the scheduled weekly discussions, from monitoring the ongoing frequent discussions and messages among participants, and from a more extensive individual and group discussion at the conclusion of the study period. Additional data was gathered by monitoring the actual time spent by each individual in the virtual environment, as well as their frequency of visits.

## Discussion and Interpretation

All members of the study group began the process by downloading the required software and creating their in-world characters. However, participants one and two were unable to actually run the SecondLife software to enter the virtual world because their personal computers did not have adequate graphics hardware. Both participants then sought access by using computers at their schools. Participant one was then able to get access to the SecondLife virtual environment, while participant two spent several weeks negotiating with their IT department to have the software installed. After the software was finally installed, participant two continued to have technical problems, and eventually withdrew from the study without accessing the SecondLife virtual world environment.

While the remaining four participants were all able to gain access to the virtual world environment, further problems were experienced due to the almost weekly software upgrades carried out by SecondLife. After a month of almost weekly updates, each requiring their IT department to reinstall the software, participant one was unable to maintain a consistent participation in the synchronous activities of the study. Participant one did continue activity in the SecondLife environment, but interacted with the remaining members of the study in a limited manner.

A third significant issue arose early in the study, as the reality of having participants spread across three time zones made it difficult to maintain the weekly, synchronous group discussions. With the two hour time difference, along with changing schedules and commitments in the participants' personal lives, it became increasingly difficult to have weekly synchronous discussion with all participants attending, and these were soon replaced by ongoing small group discussions throughout the week. The frequency and depth of these small group interactions suggests that this change did not distract from the data for the study itself, and the remaining five participants each maintained ongoing contact with the researcher.

Participant three proved to be the most active of the five participants. By spending three to four hours in the SecondLife environment

each day, participant three very quickly mastered the movement and communication skills required, and spent significant time exploring the diverse environment of SecondLife, interacting with other SecondLife members from throughout the virtual and real world. After several days of such exploration, participant three returned to the study's island, and began the building of a very complex, futuristic building facility designed to include virtual classrooms, meeting rooms as well as a theatre capable of presenting PowerPoint presentations and streaming audio and video. Participant three also became quite proficient in using SecondLife's in-world economy to earn virtual dollars which were then used to purchase additional, and even more sophisticated, resources for the facility being constructed. Participant three then began inviting her real-world students to meet with her in the virtual learning environment that had been created, eventually holding full classes and class discussions in SecondLife. The feedback from students was very positive, and the ability to use the virtual environment to create visualizations of otherwise hard to visualize math concepts proved to be most meaningful. This participant spoke frequently of her new appreciation for the experiences of her digital learners, and of how participation in the virtual world created a new common language with those learners. Participant three then became a vocal advocate for the virtual world environment, and began introducing her colleagues to its potential.

Participant four also became immediately active in the SecondLife environment, first attracted to the social connectivity of the virtual world. Spending twelve to fourteen hours a week in-world, participant four also quickly mastered the movement and communication skills, and used them to explore the real-world global connections available in the online virtual environment. Because of his role in graphic design, participant four became interested in the potential applications of those graphic design skills in the virtual world environment. Using Photoshop, participant four began creating avatar clothing and other resources that he then made available in the SecondLife environment. He began plans for providing in-world classes and workshops to teach other SecondLife community members how to

create similar resources. He also began plans for how to introduce his real-world graphics students to this virtual world, which he believed provided those learners with some focused graphic design applications, and due to the in-world economy, also provide opportunity for real-world income. The perceived value of this virtual world environment led participant four to begin taking real world classes on game design and development, to explore how to further integrate the virtual world environment into the traditional classroom experience.

Because of changing time commitments, participant five spent less time interacting with other study participants, yet became actively engaged with the SecondLife environment. Initially averaging one to three hours a week in the virtual world environment, participant five actively explored the full SecondLife environment, looking for other instances of educators using the virtual environment to enhance learning. The findings led participant five to prepare and present a series of formal conference presentations on the uses and potential uses of virtual world technology to enhance learning. Though actual time spent participating in-world decreased through the period of the study, participant five invested significant time and energy advocating virtual world technology, both locally and nationally.

At the conclusion of the study period, participants three, four and five remain active in SecondLife, and have taken steps to begin integrating the technology into their real-world educational practices. Participants one and two, who experienced the technology issues limiting or prohibiting their participation, have taken steps to personally secure the technology needed, and are now beginning their individual activity in SecondLife.

### **Conclusions and Recommendations**

Perhaps the most significant conclusion that may be drawn from this study is that however much potential may exist for SecondLife virtual world technology to enhance learning, the realization of that potential will be limited until the technology issues are resolved. It is important to recognize, however, that the technology limitations are due to the unusually high graphics requirements of this new technology, and the frequent upgrades

common to a new technology, and are not the result of skills or abilities of individual participants. Ultimately, the required technical skill of SecondLife visitors is quite low, with a learning curve attainable by anyone with basic computer skills.

It was also seen that the virtual world technology in SecondLife provided significant motivation for the participants to explore and become more deeply engaged in the experience. Even without the planned weekly check-in discussions, participants remained active and demonstrated meaningful self-directed learning. This degree of motivation was also seen in the participation and response of the real-world learners of participant three, as they participated in, and asked for more of, the virtual coursework. This study did demonstrate that the project's participants in SecondLife virtual world environment see this environment as having real potential to enhance learning.

### **Summary and Interpretation of Finding**

The data from the participants of this study suggest that the SecondLife online, virtual world technology does hold potential to enhance learning. The study also suggests that the SecondLife online environment also has strong potential as a means of introducing educators to the online virtual world environment, creating a familiarity with, and appreciation for, the digital environment so popular with an increasing number of the learners in our traditional classrooms.

### **Recommendations for Future Practice**

This study would suggest the following list of guidelines for future implementation of the online virtual world technology as a learning tool:

1. Until the technology infrastructure has stabilized, provide means of ongoing technical support and alternative access for participants.
2. While encouraging ongoing interaction among participants, provide for asynchronous participation rather than requiring synchronous activities.

3. While leaving the process un-scripted, provide a collection of individual asynchronous activities or projects for those who may need initial in-world direction.

4. Provide participants with a prepared and regularly updated list of in-world activities and locations that introduce them to some of the best practices of the educational uses of SecondLife.

5. Provide participants with basic documentation introducing the in-world economy, and other basic skills to facilitate their initial comprehension of the environment.

### Recommendations for Future Research

It would be meaningful to conduct this research with a larger sample of participants, to verify this result. Additional research would also be meaningful by focusing on specific discipline areas of the participants. For example, encouraging an economics instructor to specifically explore the educational potential of the SecondLife, virtual world economy, or encouraging a physics instructor to consider the application of the specific physics abilities of the environment. And, although only loosely considered in this study, it would be meaningful to explore the individual characteristics of the participants, such as age, degree of technology immersion, and familiarity with the overall digital gaming environment, as to how those factors may influence the engagement in, and satisfaction with the virtual world environment.

### Conclusions

This study suggests that although serious external technology limitations do currently exist, the potential for using the online virtual world environment to introduce educators to the digital, virtual world learning environment is strong. This introduction has the ability to create an appreciation of that environment's potential as a learning tool, as well as a familiarity with a language of a digital culture represented by an increasing number of our learners.

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## Appendix A

Online, virtual world services:

Active Worlds

<http://www.activeworlds.com>

Cybertown

<http://www.cybertown.com>

Moove

<http://www.moove.com>

Playdo

<http://www.playdo.com>

SecondLife

<http://www.secondlife.com>

Sora City

<http://www.soracity.com>

There

<http://www.there.com>

Worlds

<http://www.worlds.com>



## Appendix B

Examples of educational projects being conducted in SecondLife:

### Global Kids Island

Global Kids Island in the teen grid is a place for teen residents to learn about important social and world issues. The island recently hosted (winter, 2006) a digital media essay contest, the SL version of the Save Sarfur charity wristband campaign, a photo show from Global Kids Leaders, and interactive, experiential workshops led by GK staff on issues related to digital media.

### The Grad Student Colony

The colony is a location with resources for, and communication between graduate students. Sample research projects currently underway here include: A Senior Instructional Designer and adjunct and a doctoral student in the Instructional Technology and Media studying communities, communities of practice, and computer supported collaborative learning. The goal is to determine how virtual world technologies support these areas. A PhD candidate in Rhetoric and Composition, with research relating to identity development in textual social epistemic environments, is also part of the colony.

### The Heart Murmur Clinic

A virtual building created by medical students to provide a visual and auditory immersion in the symptomology of infantile heart murmurs.

### The Linden Planetarium

A virtual planetarium in which you can view educational lessons on astronomy, using the full visual features of a rotating planetarium facility.

### The Metaverse

Elon University SL is being used in a 300-level, writing-intensive "Technology & Society" seminar. This link includes syllabus, assignments, questions for discussion, and a handout for instructors.

### The Medieval Village

A construction of a virtual Medieval village, through which you can walk and experience the surroundings appropriate to the period.

### The Virtual Hallucination Building

A virtual building created by graduate students exploring the symptomology of Schizophrenia. They have constructed a building which you walk through while experiencing the audio and visual symptoms of schizophrenia.



Figure 1.



Figure 2.

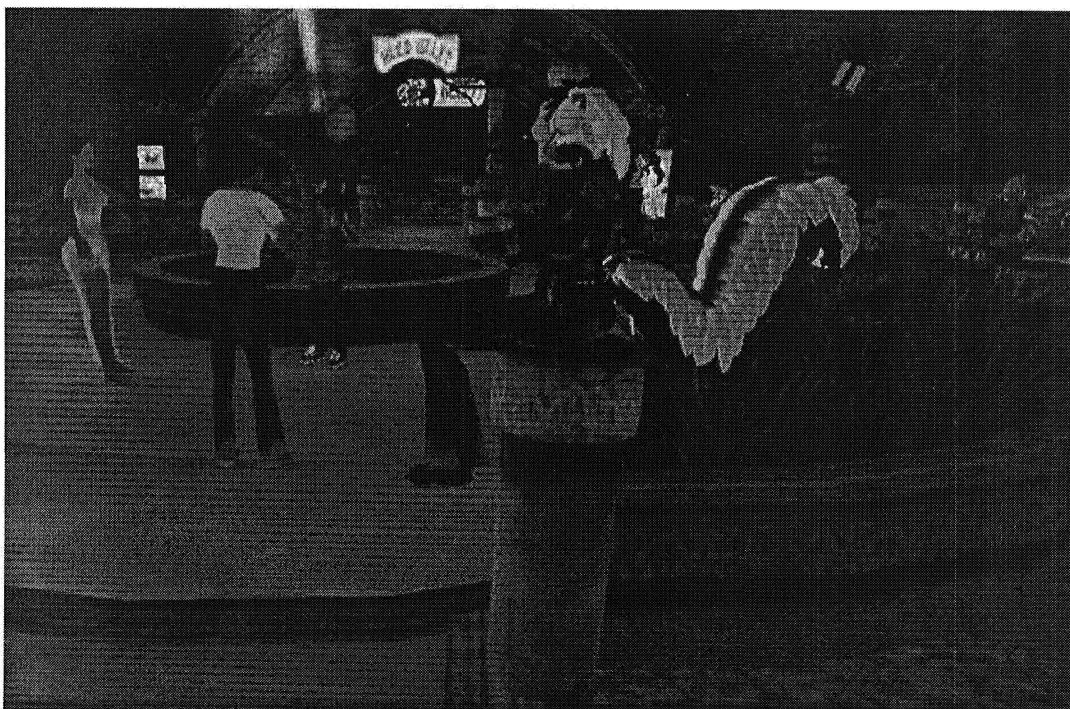


Figure 3.



# Using the Second Life Online Virtual Technology to Introduce Traditional Educators to the Digital Culture

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# The Digital Learner

- Impatient
- Demand to be engaged
- Demand personal attention
- Demand personal meaning
- Demand Social Access
- Demand immediate feedback — with meaning
- Redefine “expertise” and “authority”

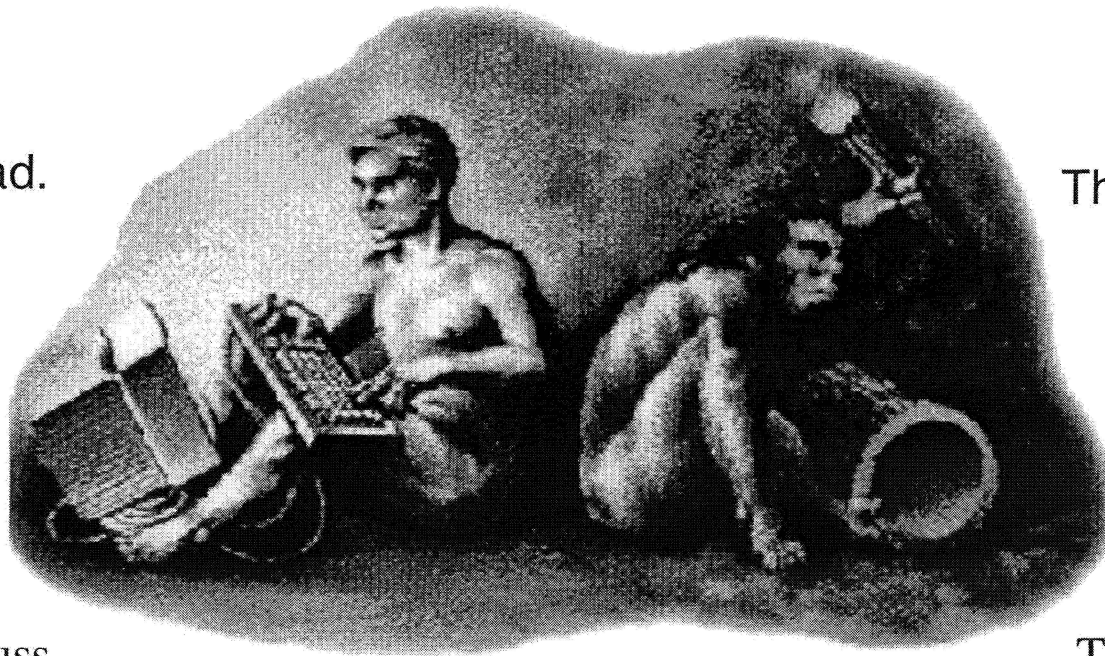
# The Digital Learner as Described by the Traditional Educator

They won't study.

They can't study.

They won't read.

They can't read.



They won't discuss.

They can't discuss.

**They just want to be entertained.**

All they want to do is play their games.



# A Brief History of Educational Innovation

# History of Educational Innovation

- The concern is that students can no longer properly prepare bark to be used to calculate the problems in class, as they have come to depend upon the new slates. What will they do when a slate is dropped and broken?
  - 1703 Teachers' Conference Report

# History of Educational Innovation

- We can no longer ignore the disturbing reliance that is developing upon paper. Children no longer learn proper handling and preparation of the slate, as is evidenced in the habit of getting dust all over themselves. What will they do when they run out of paper?
  - 1815 Principals' Meeting Minutes

# History of Educational Innovation

- The greatest threat to education today is students not being expected to maintain their ability to properly use the knife to maintain a functional point on their pencils. The trend of using ink for writing must not be encouraged or tolerated.
- 1907 National Association of Teachers Report

# History of Educational Innovation

- We are appalled at teachers allowing students to use store-bought ink in the classroom. The inability to be able to mix their own writing ink threatens the very success of a student's education. Those students running out of ink will not be able to effectively participate in the lessons until they make their next trip to the settlement.

- 1928 Rural American Teacher

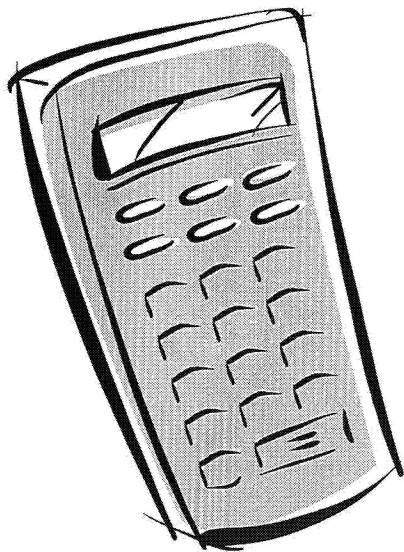


# History of Educational Innovation

- The ball point pen will be the ruin of education. Students use these devices and then just throw them away. The values of thrift and frugality are being spurned, leading an entire generation of young people astray. Businesses and banks will never allow such expensive luxuries.
- 1950 National Education Report

# History of Educational Innovation

- Electronic calculator..smalculator. Not in my classroom you won't!



- Mr. Kite's 7<sup>th</sup> Grade Math Class
  - Beardstown, IL 1965



# Current Practices in Educational Innovation

- “No cell phones allowed.”
- “No emailing during class.”
  - Electric Paint
- “No game-playing!”
- “I’ll shape ‘em up!”





# Digital Culture and Digital Immigrants (Prensky)

Or



# Cultural Transition

- Books, articles, conferences, workshops
  - Cancelled laptop programs
- “A way of being”
- Immersion into the digital culture
  - Immersive experience....
  - GAMES!!!!







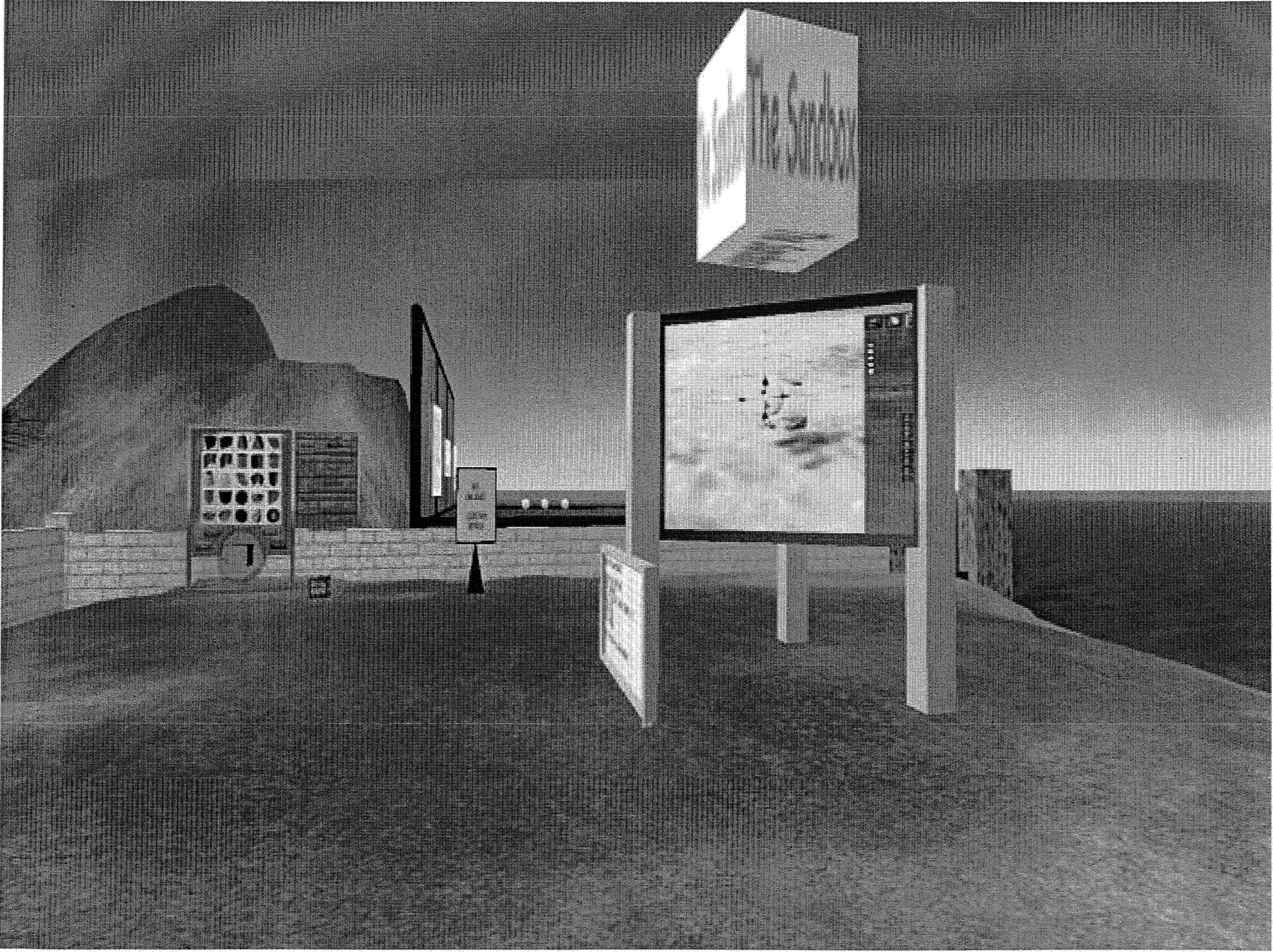
# Second Life

- Immersive
- Open experience
- Free
- Less likely to be eaten



# The Immersion

- Five subjects
- Technology challenges
  - Graphics card, bandwidth, permissions
- Philosophical challenges
  - What do I do now?
  - Why is that giant, six foot tall blue bunny following me?



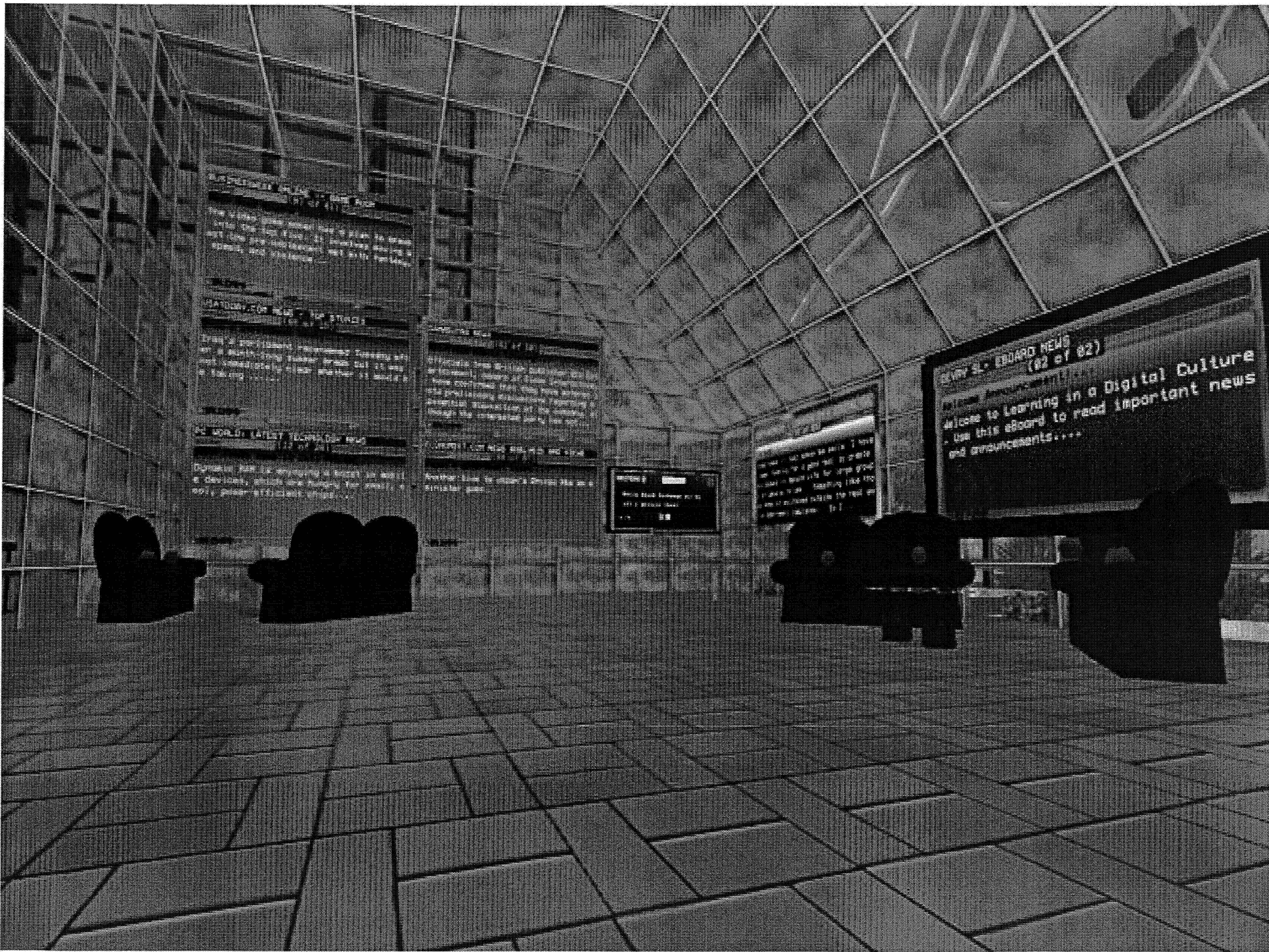




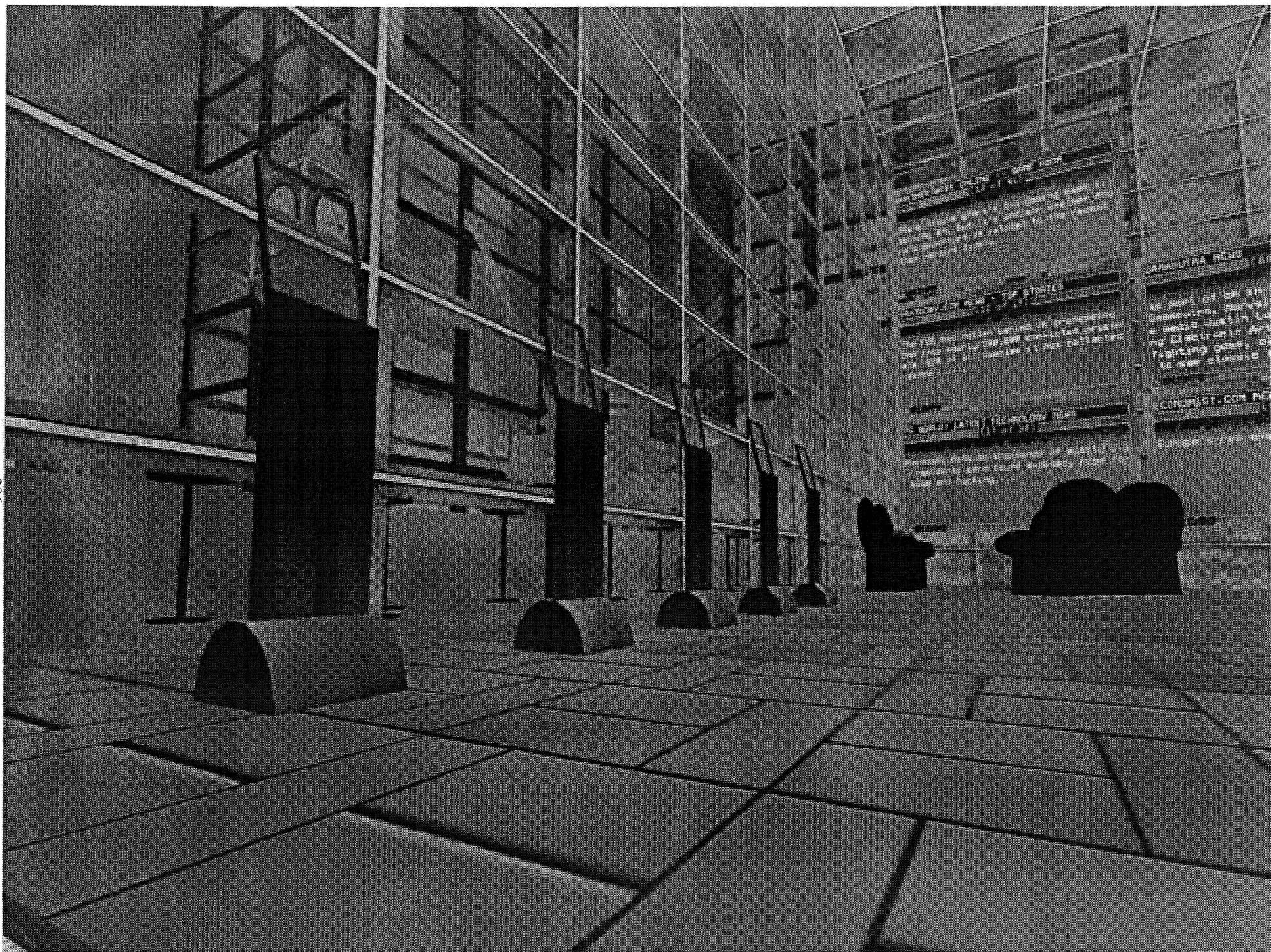








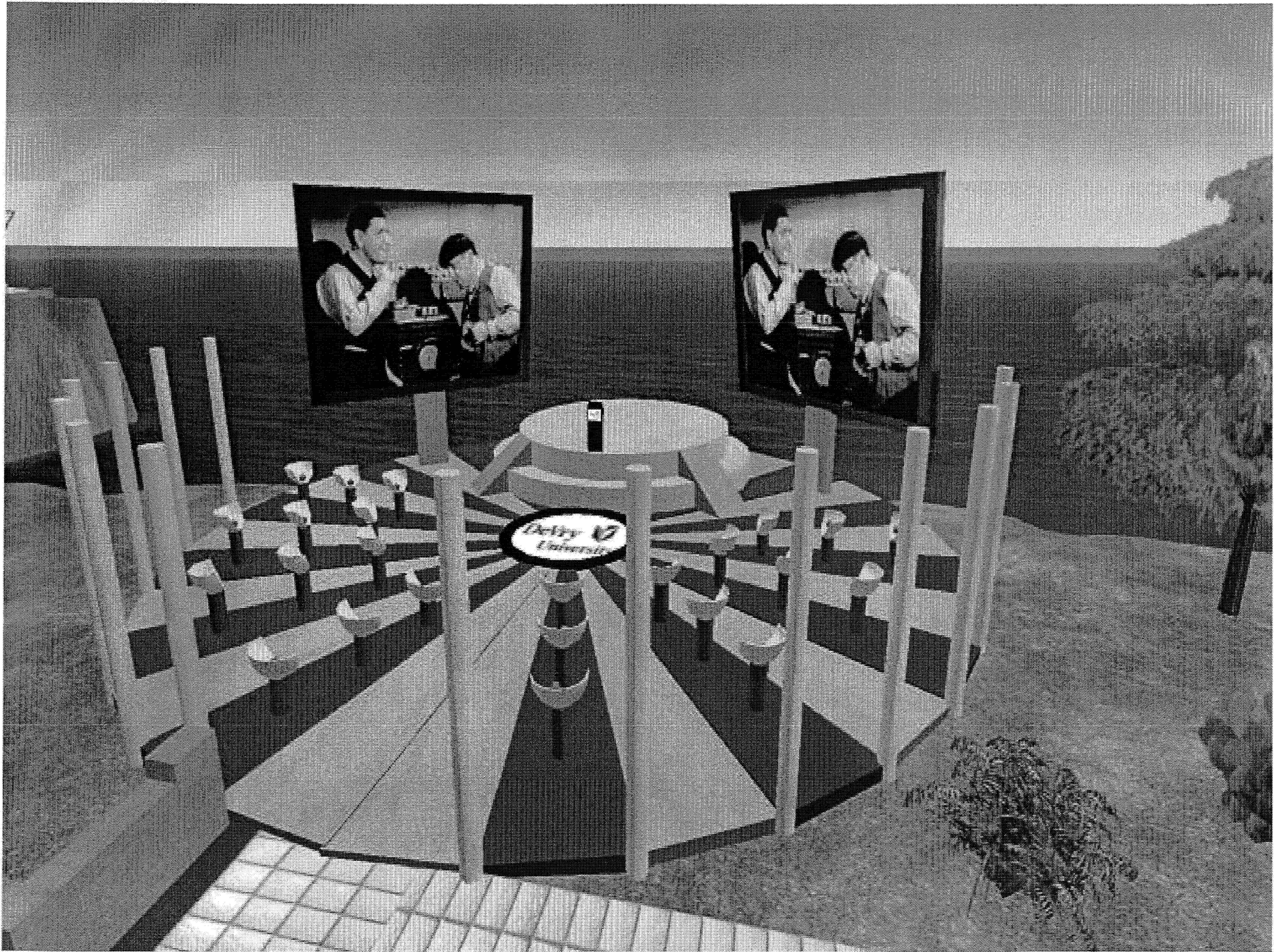




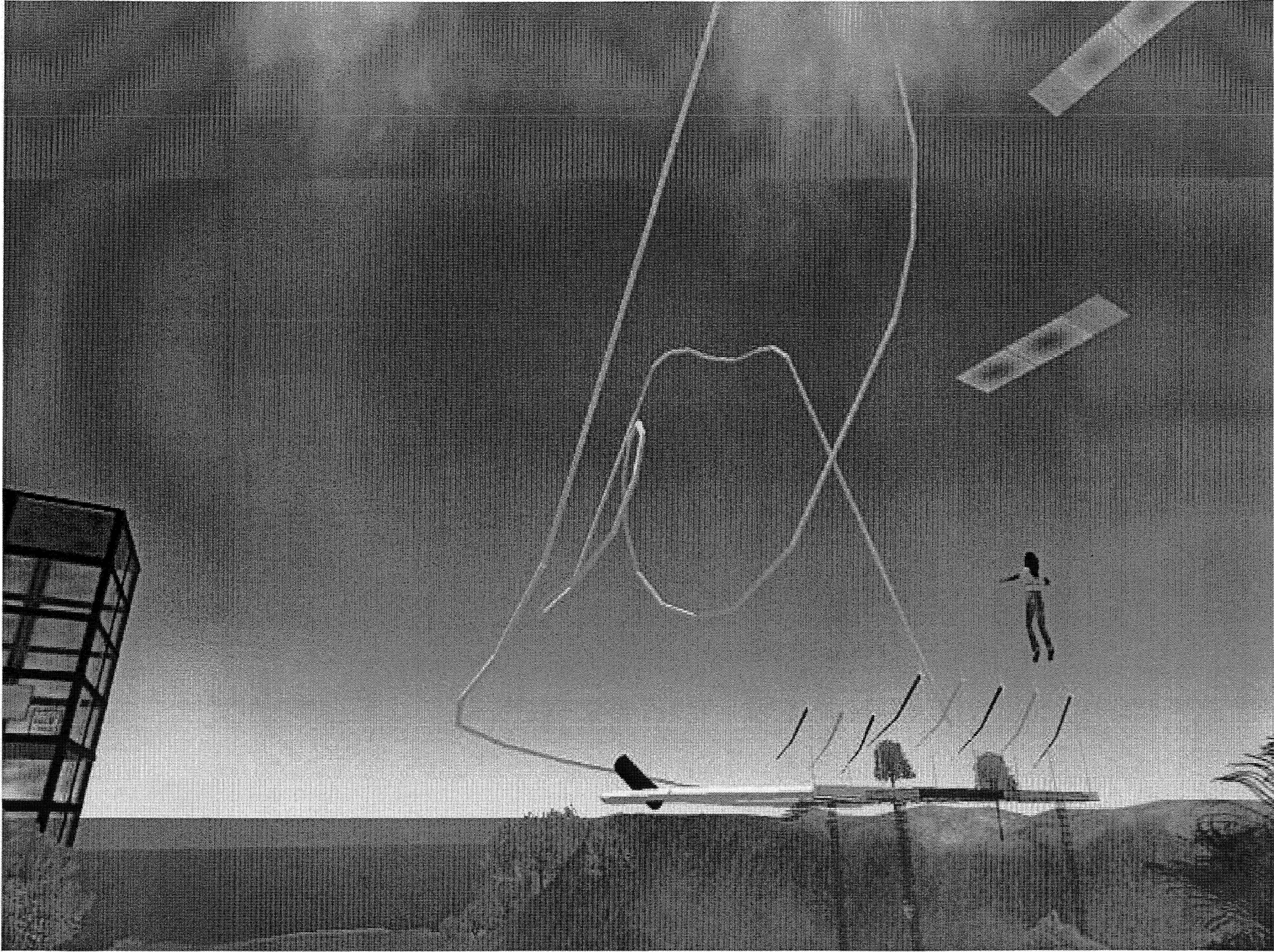






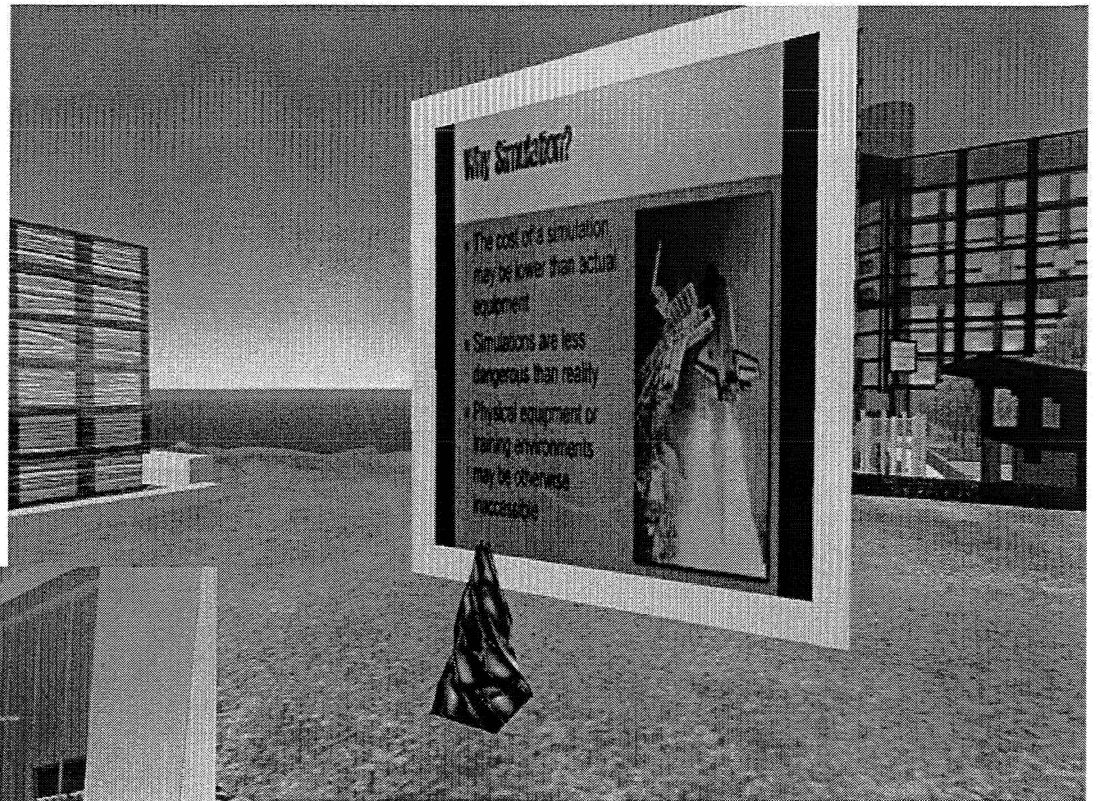
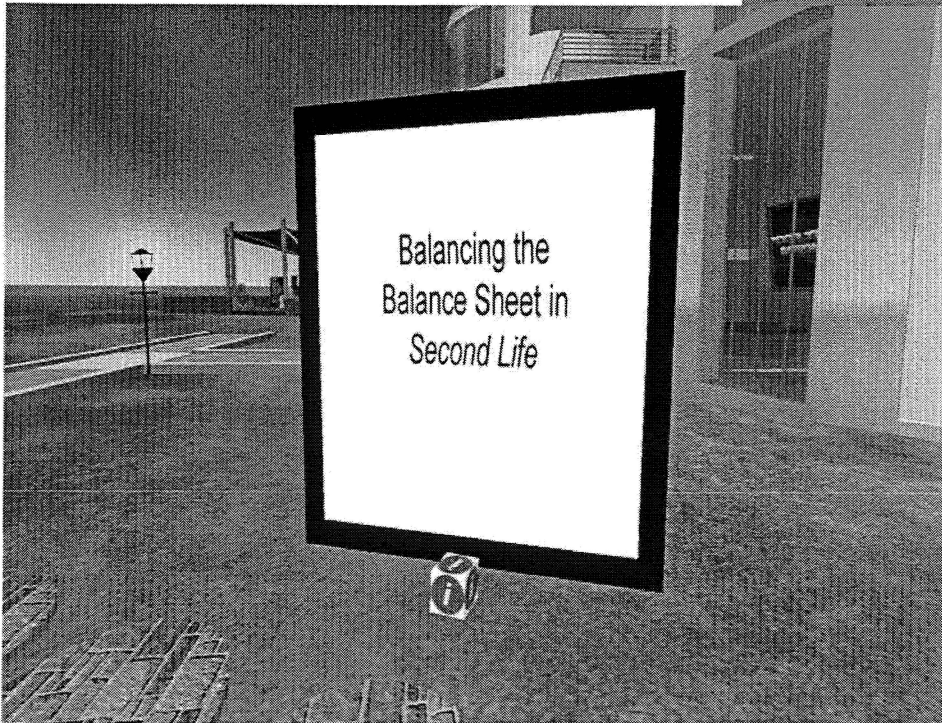




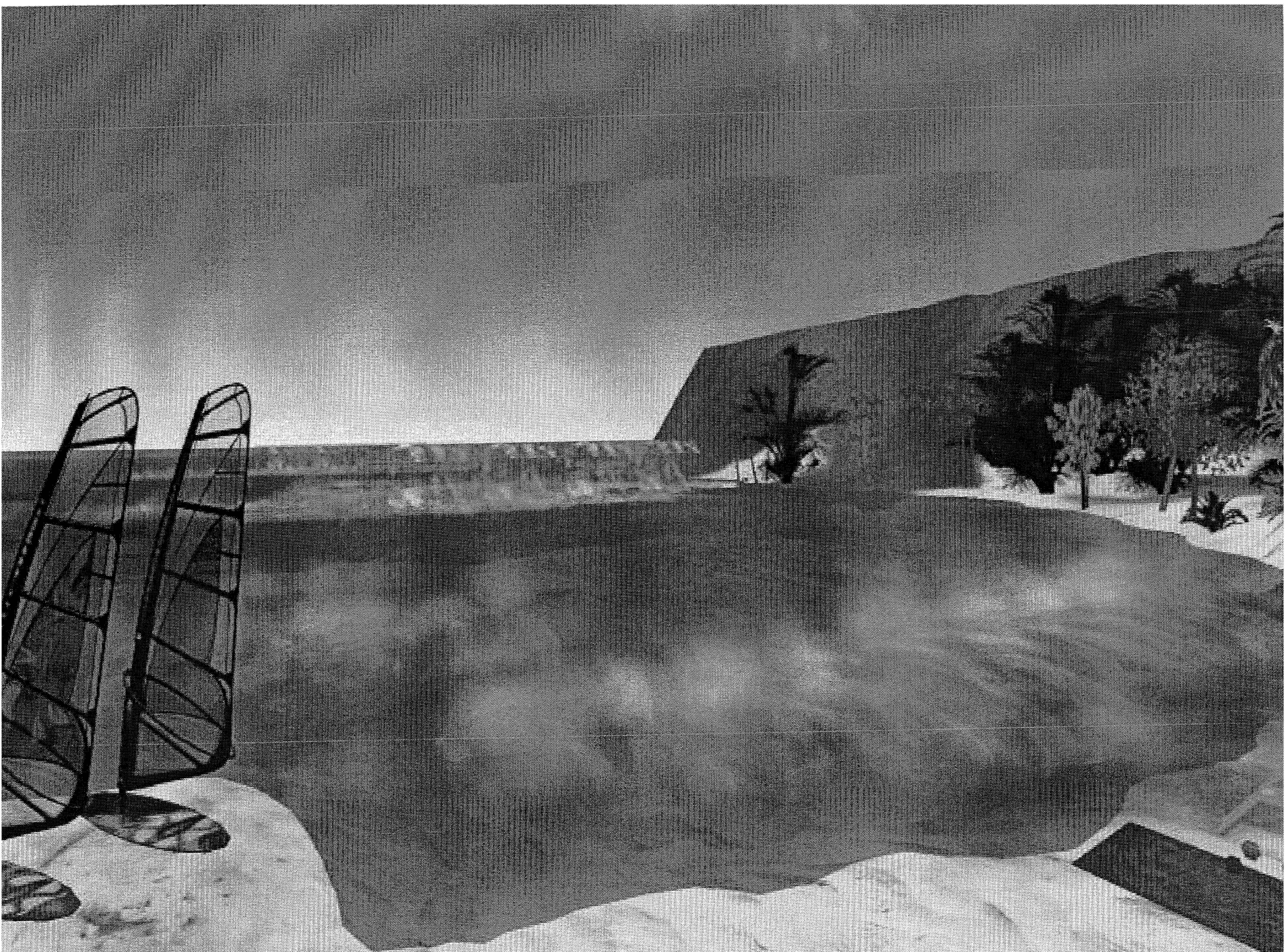
















The chemistry guy...

# 7 Key Issues *(and one other thing)*

- The Wilderness v. at Home
- Expert v. Self Learner
- Purpose v. Experience
- Process/Structure v. Outcome
- Topic-Based Social Network v. Outcomes-Based Social Network
- Re-Create v. Create
- Should's v. Can's
- The question of “safety”



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